



# citizens' bulletin

Volume 6

Number 2

October 1978

\$2/yr.

## *rivers...*



## cleaning up their acts...

**Inside** *Waterways: Status, 3; Ways Water Works, 7; Sprucing Up Our Streams, 9; Land Trust Issues, 11; New Faces: in Water Resources, 12, and in Air, 13; 208: Industrial Sludge, 14; FYI: Air, Noise Conferences, 16; Meadows Management, 18; Trailside Botanizing, 20.*

# WILLIAM S. BURNHAM

William S. Burnham, Chief of DEP's Open Space Acquisition Unit, died September 4 after a long illness.

"Almost single-handedly Bill Burnham changed the direction of the State's land acquisition program," said George Russell, Director of DEP's Staff Services. "He made some amazing changes and accomplished a great deal -- when the going was uphill all the way.

"His accomplishments, in terms of lands acquired by the State for the enjoyment of its citizens, are apparent all across the State," Russell said. "His death leaves a void that will be hard to fill."

Among Burnham's notable accomplishments, Richard Wallace, Assistant Chief of the Open Spaces Acquisition Unit, cites the conclusion of efforts to acquire the land that will become Silver Sands State Park -- an acquisition effort that was "eighteen years in the works."

Jerry Knight, Supervising Appraiser in the Open Spaces Unit, credits Burnham's dedication, powers of persuasion, and his "rapport with agencies and landowners" with securing many gifts of land to the State, including a 500-acre parcel in Andover and the several-hundred-acre Lester Shippee property in Killingly. Most of the over 650 acres acquired in fiscal 1978 and over 400 acres acquired in fiscal 1977 came to the State as gifts.

The following tribute to Burnham, written by DEP Planner Joseph Hickey, appeared in the Willimantic Chronicle:

Bill Burnham was a Connecticut Yankee and a natural buyer and seller of land. Born and raised on a dairy farm in Mansfield, he had the countryman's love of the land and a deep feeling for our state's lovely countryside. Thus he was strongly motivated to maintain its green character through land acquisition and preservation, especially in his native hills of eastern Connecticut.

With this philosophy, Bill was an obvious prospect to head up The Department of Environmental Protection new Open Space Acquisition Unit in 1975 and to help revive a moribund state land acquisition program.

Despite the bleak climate posed by fiscal crisis and bureaucratic constraints, Bill initiated and completed many acquisitions of key properties. Most specifically, he pioneered in the use of gifts and partial gifts as the state's matching share to trigger federal grants-in-aid.

In so doing, his overriding priority was to preserve land, in particular to expand public access to any form of recreationally useful water.

Although many of his pet projects have not yet come into state ownership, future generations of Connecticut residents will enjoy the fruits of his dreams and labor.

May he rest in peace and may his example inspire others to join the long and continuing effort to keep Connecticut a green and beautiful place to call home.

Burnham is survived by his widow, Pauline Haskell Burnham of Columbia; a daughter, Vicki Burnham of New London; a son, Wesley W. Burnham of Willimantic; his mother, Gertrude Savage of Mansfield; and a brother, Arnold Burnham of Mansfield.

## WHOOOPS!

*The deer on the September Citizens' Bulletin cover was photographed by wildlife photographer Leonard Lee Rue III.*

*For off-season camping, you'll find Housatonic Meadows State Park one mile north of Cornwall Bridge on Route 7; Kettletown State Park, in Southbury, is three and one-half miles south of Exit 14 off Route I-84.*

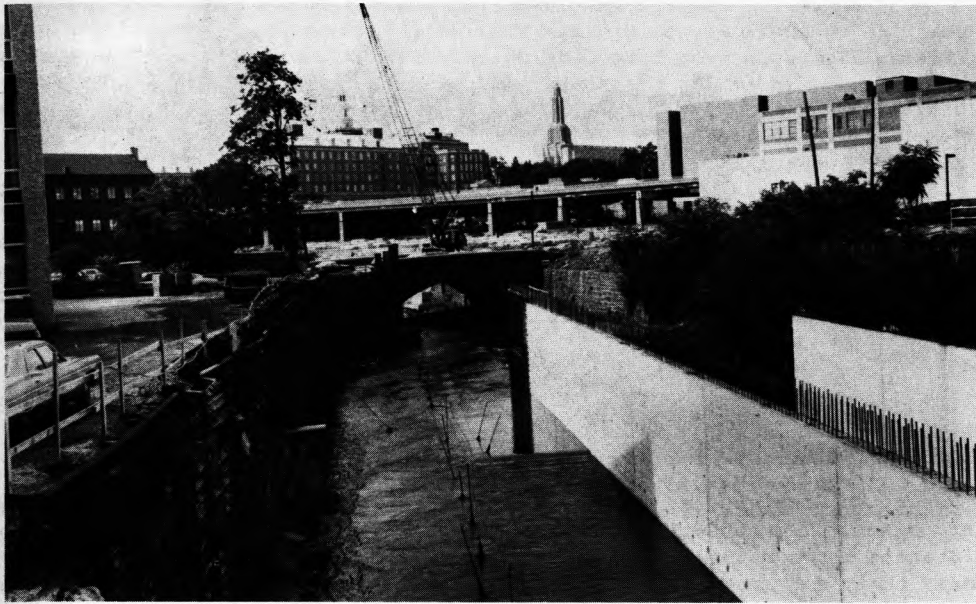
**Cover:** *Sailing on the Thames River at Groton. Urban centers along this waterway and a concentration of industry combine to make this one of Connecticut's water pollution problem areas.*

**Our Thanks** to Lillian Bramanti for her help with setting this issue of the Citizens' Bulletin.

## DEP Citizens' Bulletin

Published eleven times a year by the Department of Environmental Protection. Yearly subscription \$2.00. 2nd class postage paid at Hartford, Connecticut. Funds are also provided through a federal grant from the Office of Coastal Zone Management under the Coastal Zone Management Act of 1972. Please forward any address change immediately.

Bulletin material may be reprinted without permission provided credit is given, unless otherwise noted. Address all communications to the Editor, DEP Citizens' Bulletin, Department of Environmental Protection, Room 112, State Office Building, Hartford, Connecticut 06115.



*The Park River, which runs through ten towns to enter the Connecticut River at Hartford, is in the final phases of a tunneling effort begun by the Army Corps of Engineers after the floods of 1938. Conclusion of the construction won't, however, solve many of the Park's major water pollution problems -- overflow into the river of combined storm and sewage drains, urban runoff of substances like oil and grease and road salt, discharges from fourteen industries. . .*

The effort to clean up Connecticut's rivers has come a long way since the original State Water Commission was established in 1925, one of the three earliest comprehensive state water pollution control programs.

The findings of the Connecticut Water Quality Report to Congress, 1978, "overwhelmingly indicate that water quality in the State of Connecticut is improving." Everyone agrees this is the direct result of getting on top of the problems of major pollution "point sources" -- by improving municipal sewage treatment facilities and by encouraging efforts of industries and other major dischargers to develop needed pollution controls.

Though we have made good progress, according to the Report to Congress, we still have at least 299 miles to go. Those are the 299 miles of navigable waters that do not yet qualify as "Class B" or "swimmable-fishable." Class B waters are defined as "suitable for bathing and other recreational uses, certain industrial process and cooling water use, and fish and wildlife habitat." Bringing all waterways up to Class B is a key goal of federal water pollution control efforts.

"The current totals are not bad," according to Sidat Balgobin, Senior Engineer with DEP's Water Compliance Unit, "when you consider that Connecticut has over 1000 streams, running over 8400 stream miles. Well over 90 percent of these miles are now 'swimmable-fishable'."

Furthermore, these miles of Class B waters include a number of notable pollution cleanup success stories. In the Connecticut River Basin, the entire 54-mile length of the Farmington River now meets the "swimmable-fishable" standard, as do the entire Salmon and Mattabassett Rivers.

In the Thames basin, the entire 27-mile Willimantic River qualifies as a result of intensive clean-up efforts involving one sewage treatment plant and 32 industries.

Among the Housatonic Basin tributaries, the whole 27-mile Shepaug River also makes the grade, as do 20 miles of the 35-mile Naugatuck River. The latter is Connecticut's biggest water pollution control success, according to Robert Taylor, Director of DEP's Water Compliance Unit. "This is the river about which they said it couldn't be done." But, with more than \$15 million worth of municipal sewage treatment projects for eight municipalities and aggressive efforts to curb industrial pollution, today the Naugatuck is coming clean.

The 299 miles that have yet to attain "swimmable-fishable" quality take on a more serious aspect, however, when they are considered, as they are in

**THE  
LAST  
299  
MILES  
ARE  
THE  
HARDEST** ➔



*Lacking private craft, you can cross the Connecticut River on the Rocky Hill-Glastonbury ferry. The nation's oldest ferry, it's been in continuous operation since 1655. It runs from April through November, weather and river conditions permitting; from 7 a.m. to 9 p.m. daily. Fare is 25¢ for car and driver, 5¢ for pedestrian or bike and rider.*



the Report to Congress, as part of the 600 miles of major navigable watercourses. This 600-mile total includes: the namesake rivers of the State's three major basins, the Connecticut, the Housatonic, and the Thames; their seventeen major tributaries; and 86 miles of coastal basin rivers and streams. And the report's conclusion is that half Connecticut's major rivers and harbors are problem areas.

To be specific, only about a third, or 23 miles, of Connecticut's 69-mile stretch of the Connecticut River qualifies as "Class B." All seventeen miles of the Thames River fail. Only 27 miles of 86 total miles of coastal basin waterways measure up.

The Housatonic does only a little better. Twenty-nine miles of its 80-mile Connecticut stretch, or 36 percent, is "fishable-swimmable." Its score was better before the discovery of PCB's -- polychlorinated biphenyls-- in sediments in the area above Lake Lillinonah and the contamination of fish by these sediments.

The Report to Congress is, however, optimistic about the future: "As the State Water Pollution Control Program progresses to application of advanced waste treatment systems, and, as necessary, control on non-point source pollution, improvement in water quality will continue."

"My prediction," Robert Taylor said, "is that we'll finally be meeting the 1983 goals of the Federal Water Pollution Control Act about 2010 at the current levels of federal appropriations." The federal government, he said, is now backing off from supporting combined sewer separation and advanced waste treatment for municipal sewage treatment systems.

"Advanced waste treatment" refers to wastewater treatment beyond the primary and secondary treatments in use now in almost all of Connecticut's municipal sewage treatment plants. Primary treatment screens out large objects, settles out suspended solids, and adds chlorine to kill bacteria. Secondary treatment oxidizes organic wastes by means of biological or microbial activity. Combined sewers carry both sanitary sewage and storm water runoff. During storms, part of this combined flow goes untreated into receiving streams. Separation of the two systems remedies this problem.

"Most of the 300 miles of streams not now meeting standards won't meet them by 1983," Balgobin said. "How many miles will improve by then will depend to a great extent on progress on advanced treatment plants going in now. These are long-term projects. In the last ten years we've gotten to where ninety percent of our rivers are clean. The remaining miles are going to be a lot harder, because now we're dealing with complex problems like urban runoff and combined sewer separation."

"Water pollution," Balgobin said, "is an area where nothing can be solved quickly. A sewage treatment plant is probably a year in the planning stage, a year in the design stage, and two more years under construction."

**BUT OUR  
RIVERS  
ARE  
COMING...**



Money is a big part of the picture, past and future. A sewage treatment plant for a town of about 30,000, for example, costs about \$3 million. Combined sewer overflow control, Taylor notes, could cost about \$700 million in the five major urban areas where such systems are the major cause of failures to meet the "swimmable-fishable" goal.

Between 1972, when the U. S. Environmental Protection Agency accelerated its program of major grants, and 1977, Connecticut has committed almost \$321 million in federal dollars to sewage treatment and related programs. These range from preliminary planning efforts to plant construction or improvement to correction of combined storm and sanitary sewer overflow problems. The State's 1978 federal allotment of \$49,824,000 is partly committed. About the same allotment is expected for 1979.

Between 1967, when Connecticut passed its own Clean Water Act, and August 1978, the State allocated an additional \$249,389,335 in State funds from an original bond issue of \$287,363,000.

The 1978 Construction Grants Project List prioritizes over 250 proposed projects, ordering them by twelve criteria that include severity of pollution problems; population affected; benefits to aquatic ecosystems, recreation, industry, and agriculture; and type of project. An estimated \$1.1 billion is still needed for this group of new or improved sewage treatment plants, advanced waste treatment efforts, and combined sewer separation.

While cleaning up those last 299 miles may still be a long haul, there are other positive notes worth mention.

Under a federal grant awarded in 1976, Connecticut's 208 Areawide Waste Treatment Management Planning Program is digging into the complicated assortment of water pollution problems that don't qualify as "point sources": land use issues, ground water contamination, urban runoff, agricultural runoff, disposal of various leachable materials, etc. (See their Industrial Sludge report in this issue.)

Biologically, things are looking better. "Pollution-caused fish kills are way, way down from ten years ago," said Cole Wilde, Director of DEP's Fish and Water Life Unit. "Ten, fifteen, and twenty years ago we regularly got big fish kills. Today the ones we get are small, usually the results of minor accidents like trucks of gasoline tipping over.

"The Naugatuck," he said, "was once one of the most grossly polluted rivers in possibly the whole country. It's not clean enough yet for us to stock fish, but we should be able to stock it soon."



## COMING CLEAN

*Crossing the Housatonic River via the covered bridge from West Cornwall to Sharon cost 15¢ for a horse and rider back in the early nineteenth century when the bridge replaced a barge ferry.*

*In the not too distant past, before the bridge was taken over by the Department of Transportation and lifted and refurbished, town square dances were held in the bridge.*

*Eight towns are about to consider an ordinance to protect forty-one miles of this stretch of the Housatonic River, and it is being considered for federal protection under the National Wild and Scenic Rivers Act.*



"In 1951," Wilde adds, "the Naugatuck River was surveyed all the way up to Torrington and they didn't find a living thing for the whole length - not even bacteria - due to the industrial discharges of heavy metals. Today fish are coming back into the Naugatuck to a good degree at least as far downstream as Thomaston and Waterbury, and at least some are appearing down the whole length of the river."

So, while cleaning up the last, toughest stretches may not happen immediately, prospects for Connecticut's rivers look good, Balgobin said. Though there's always the possibility of more surprises like the PCB's in the Housatonic River.

"Public awareness and concern," he added, "are more important than ever now. The impacts of land use, septic system design, groundwater protection, and landfill siting and operation on surface water quality are being realized. Dealing with these issues is going to require a high level of local and public involvement."

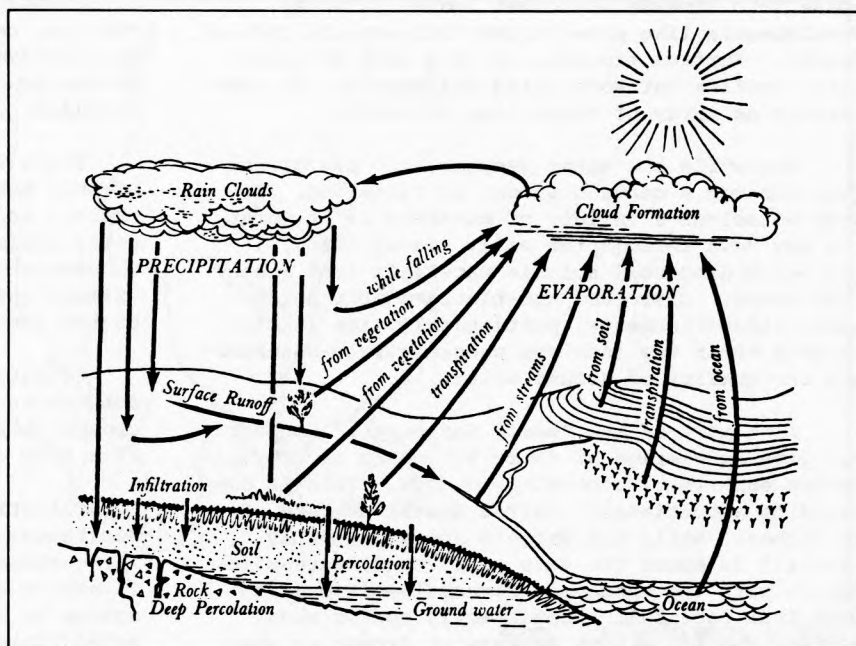
*All fifty-four miles of the Farmington River now qualify as "fishable-swimmable." DEP Water Compliance staff point out, however, that water classifications are made according to use rather than on the basis of tests of actual quality. Farm runoff, for example, or even a dead animal can lower actual quality. Would-be swimmers should check further -- on both cleanliness and general safety factors -- before taking any plunges.*

## **FIT FOR FISH... OR FOWL ...OR FUN**



Leonard Lee Rue III

# ONCE AROUND THE HYDROLOGIC CYCLE



*Do we have enough water? Or are we using it all up?*

*Where does pollution happen? In nature, how does it get cleaned up?*

*Why, when there's no rain, do rivers keep flowing? And how much part does a river play in its own cleanup?*

Given half a chance, nature does a notable job of cleaning up the world's water. This happens at various stages in the series of mainly familiar phenomena that make up what's called the "Hydrologic Cycle."

The world's total water supply remains constant. In some parts of the world it may not be readily available in quantity. And it's possible to pollute the available supply so the useful water available is reduced - or is very expensive. But the total supply is not dwindling.

Most of the world's water (97 percent) is in the oceans. Another two percent is frozen into glaciers and ice caps. Part of the remaining one percent is in the atmosphere as water vapor, snow, sleet, hail or rain. The rest is in lakes, streams, rivers, and underground water supplies. It's this last small fraction that is the only water available for uses such as for drinking water.

Molecules of water constantly change their places and physical states. (See diagram above.) Water vapor in the air cools and condenses into liquid and falls as rain, or if it's cold enough freezes and falls as snow or hail.

Some of this rain and snow and hail falls on the ocean which is, in turn, the source of 84 percent of the water vapor in the air. Of the precipitation which reaches land:

\*In Connecticut, about half a total 40-50 inches of precipitation evaporates from the surface -- streets, lawns, tennis courts, plants -- or is absorbed from the soil by plants and returned to the air via the process of transpiration. An acre of corn, for an example, gives off 3,000 to 4,000 gallons of water a day.

\*Some water runs off over the ground's surface into streams or rivers or lakes. A certain amount evaporates from the surfaces of these bodies of water to quickly start another trip through the hydrologic cycle.

\*According to Richard Hyde, Senior Environmental Analyst with DEP's Natural Resources Center, depending on the soil, seven to eleven inches of the total precipitation soak into the upper parts of the ground--from which still some more eventually evaporates. The remainder works its way down ultimately into the saturated area of the ground atop the base of impervious rock. The top of this saturated area is what we refer to as the water table.

At the vapor stage of the cycle, water is generally at its purest, rather like water that has gone through the similar but faster process of distillation. As water vapor condenses, some particles of mineral matter and gasses are carried aloft.

Since water's molecular structure dissolves many substances, as soon as water vapors condense into rain it begins to pick up substances. Rain picks up pollutants as it falls through dirty air. Once on the ground, it dissolves or suspends more materials -- soil, plant materials, pesticides, fertilizers, street salts, oil and grease, farm wastes, etc.

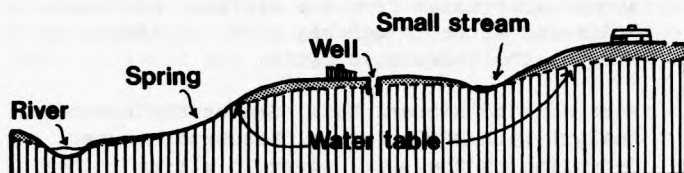
Water running off over the ground erodes soil and picks up an array of substances and carries



these into streams and other bodies of water. Developments like paved areas increase the rate of runoff. Surface storage, as in a lake or reservoir, settles out some solid pollutants. It also permits an array of biological activity.

Meanwhile the water seeping into the ground goes through a certain amount of filtering. It also dissolves a variety of minerals as it works its way down through the soil. In addition, it may leach dangerous soluble materials from areas like dumps. Dissolved non-biodegradable pollutants like detergents, particularly, are likely to work their way into and progressively deteriorate the quality of ground water.

As a part of the "humid Northeast," Connecticut gets an average of 40 to 50 inches of precipitation each year, according to Hyde. This is compared to a continental United States average of 30 inches. While the State's average monthly rainfall is about the same year round, streamflow varies with the seasons. Streamflow is usually high from late fall through early spring when surface runoff is high because of frozen or snow-covered ground surfaces. During the summer growing season, streamflow is lower. This is true, first, because growing plants take up large quantities of water, depleting soil moisture. In happens also because the summer sun's rays provide more energy for evaporation. Little precipitation is allowed to run overland into streams in the summer. But streams don't disappear, at this time, though flows may be lower.



This is because ground water drains into streams from the water table. Connecticut's ground water does not exist, as many people imagine it, as underground lakes or streams, nor is it like a flat "table." Our ground water follows the contours of the land. (See figure.) Stream channels occupy the lowest parts of the landscape. The high ridges of land divide one drainage area from another like small versions of the Continental Divide created by the Rocky Mountains.

Because of the force of gravity, ground water moves constantly from higher to lower elevations. The water table moves in the same general directions as surface runoff and streams. It moves relatively slowly; in Connecticut groundwater is exchanged about every year except in some larger aquifers. Its underground movement feeds streams during rainless periods, keeping water in most Connecticut streams at all times of the year.

Changing stream levels can play a significant part in the pollution picture. Amounts of water

in streams determine the amounts of pollutants that can be naturally dealt with by the stream -- by dilution and other processes. Turbulence in a stream tends to increase the levels of oxygen it contains.

Since water naturally carries some dirt and organic materials and dissolved minerals, when exactly is it polluted? Tuning the Green Machine calls pollution the result of "substances high in concentration and irregular in source; they constitute qualitative and/or quantitative surprises to the natural system."

Pollution can also be considered as levels of substances harmful to plant or animal life -- groups whose health is a better index of the health of a body of water than chemical tests alone.

Pollution may result from basically natural substances in concentrations too great -- as with large amounts of sewage dumped into a river. Or it may be caused by substances too foreign to a system -- like the Housatonic River's polychlorinated biphenyls or PCB's. Every body of water is unique in the levels of pollutants it can handle.

A whole list of factors determine a river's cleanliness and good health. Flow affects the types of life a waterway plays host to as well as its ability to dilute pollutants. Turbulence and temperature play significant parts in the amount of dissolved oxygen in a waterway which in turn affects a variety of water life. Clearness of the water allows aquatic plants to carry on photosynthesis which produces additional dissolved oxygen. Cloudy, or turbid, water can prevent light penetration so that bottom organisms die; it also raises water temperatures and thus lowers levels of dissolved oxygen.

If systems are in balance, complex chains of biological activity break down and recycle many natural pollutants. Rampant growth of any of a variety of organisms, on the other hand, may use up oxygen or produce levels of decomposition that in turn smother other organisms.

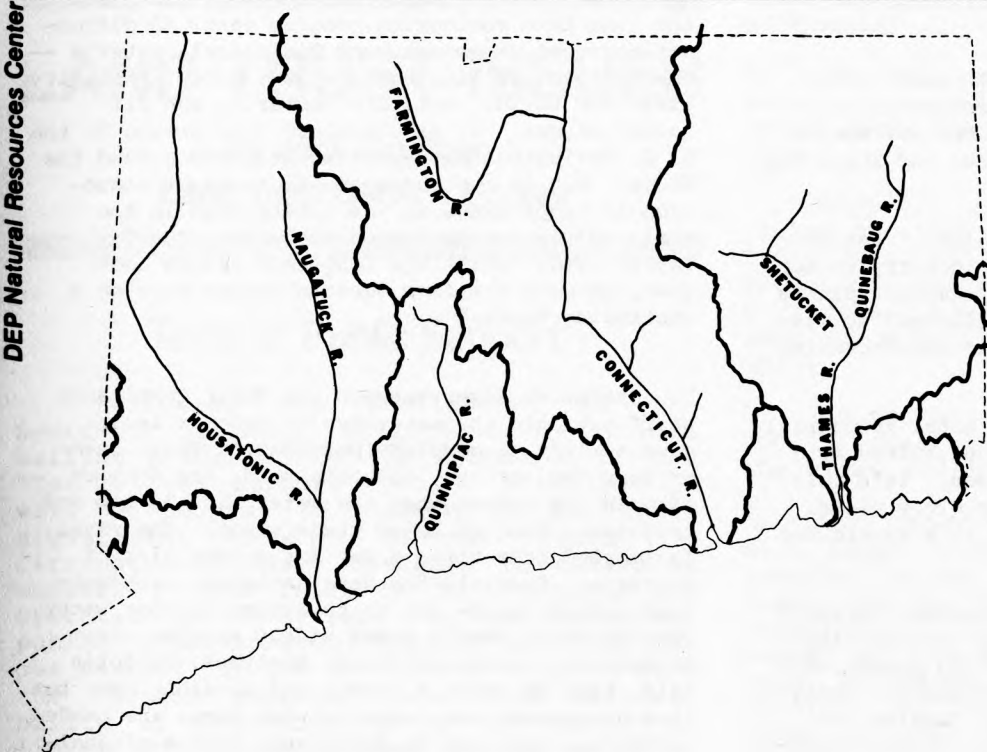
Somewhere along the line, meanwhile, any given drop of water may move to the top of a body of water, evaporate, and start around the hydrologic cycle once again.

#### GOOD READING ON HOW WATER WORKS:

A Connecticut Water Primer, by David R. Miller, Extension Environmentalist, University of Connecticut, and Richard Hyde, Senior Environmental Analyst, DEP Natural Resources Center.

A Primer on Water, by Luna B. Leopold and Walter B. Langbein. 1960: U. S. Department of the Interior, Geological Survey.

Tuning the Green Machine, An Integrated View of Environmental Systems, by The Institute for Environmental Education and The Association of New Jersey Environmental Commissions. 1978: Oceana Publications, Dobbs Ferry, N.Y.



# BASINS ARE BASIC

... to cleaning up the State's waterways.

So DEP's Water Compliance Unit offices are awash with maps--major river basins, smaller basins within these, and yet smaller basins. Some large maps are divided into hundreds of tiny areas representing the watersheds of the most minor of Connecticut's over 1,000 streams.

Rivers and streams of course, stand out. As, on some of the maps, do small dots representing municipal sewage treatment plants and sources of industrial discharges.

"Though the major basins have long since been mapped out, we've only had the more exact basin lines within the past year or so," said Senior Engineer Sidat Balgobin.

The major basins form functional natural planning units for cleaning up an area's surface waters. Basin plans, which the Water Compliance Unit produces, evaluate the states of each of the basins and map out strategies necessary to complete Connecticut's water cleanup.

Water Compliance's work also includes developing water quality standards for the State; issuance of pollution control orders and permits; and keeping up inventories and monitoring major or "point" sources of water pollution such as sewage treatment plants and industrial dischargers.

The Unit also manages the multi-million dollar program of State and federal grants for construction of sewage treatment facilities and

related improvements and assists in planning and development of these projects. It also conducts long-term water quality monitoring and performs intensive surveys of various rivers and lakes.

The Unit performed about 1,400 inspections last year. But much of its work is more theoretical than the layperson would expect.

"In the area of industrial pollution, for example," Unit Director Robert Taylor said, "we have probably identified about 2,500 potential industrial polluters among the 10,000 or so industrial facilities in the State. We've visited these 2,500 and have found and track the thousand or so with the most serious potential for polluting.

"We don't," Taylor noted, "study industrial polluters by prowling along the river banks -- though water compliance staff sometimes do go out to check up on observed conditions in a water body and track the condition to its cause or source.

"We do most of our industrial pollution studies inside the plants -- working with the process and the products to determine what will come out.

"Some industries might drop their pollutants only once a month -- these situations might be hard to isolate on a river but these pollutants may dominate a situation. A fish kill only occurs once in such a situation because the fish

population cannot be reestablished until the cause is corrected.

"We do look at the rivers. General impressions count for something. The professional in water compliance can tell by observation what's going on if he knows a river system and knows the industries on it.

"Despite what the public imagines," Taylor adds, "most pollution control by industry is not accomplished by adding separate treatment plants or processes. Instead they have cleaned up discharges by making changes in their manufacturing processes.

"About eighty percent of the total industrial pollution problem" he said, "can be solved by changes in the industrial processes. It's relatively easy if you're setting up a new plant. But not so easy or economical if it's an old one."

Producing basin plans is, likewise, cerebral activity. These studies consider factors like municipalities' projected population growth with a view to future sewage treatment needs. Changes in land use are also considered. Farming and forestry, for example, cause water quality problems different from those caused by development and different still from those produced by highly urbanized areas.

Producing more materials for more analyses, the long-term monitoring program tests 48 different physical, chemical, and biological criteria -- characteristics like temperature, color, turbidity, dissolved solids, coliform bacteria, and dissolved oxygen. It is conducted year around by the U. S. Geological Survey at 43 stations around the State. But it has undergone significant reduction in scope since it was established in the early 1970's due to budget cutbacks. "So," Taylor said, "while the long-term trends look good, there's now less substantiating data on a continuing basis."

Intensive river surveys get Water Compliance staff out onto the waterways to more or less give a river "a complete physical." These three or four day surveys, Balgobin said, are done on site in the summer when the water flow is low and conditions tend to be at their worst. The river is sampled four times a day for a long list of criteria. From all the data gathered, mathematical models can be set up to determine what water quality would result under widely varying river conditions. Such full-blown analyses, Balgobin said, take at least a summer and possibly two, but they ultimately can indicate what steps are needed to bring a river up to acceptable levels of quality. An analysis might indicate, for example, that a municipality should improve its sewage treatment plant or relocate its discharge area.



## Encampment

*The Fifth Connecticut Regiment Continental Line and DEP are planning a celebration of the two hundredth anniversary of Connecticut's equivalent of Valley Forge -- the winter 1778-79 encampment of Washington's Continental Army, under General Israel Putnam, from what is now Putnam Memorial State Park westward toward the Hudson Highlands.*

*The historic reenactment of the encampment, with 500 troops from the Fifth Connecticut Regiment, will be held on November 11 and 12 at the Putnam Memorial State Park in Redding. Admission is free.*

## Nature Center Publication

Last April 29 the Friends of the Litchfield Nature Center and Museum sponsored an all-day conference with a panel of nine scientists to discuss "Developing the Research and Education Programs of a Nature Center."

The proceedings of this Conference have now been published as a 65 page booklet. It is a carefully edited transcript of the whole day's discussion which was organized around three major topics: an outdoor research program at a nature center; the role of research in strengthening outdoor education; and the role of research in evaluating land and water management programs.

The publication is available for \$5.00 at the Museum desk; \$5.75 by mail (Litchfield, CT 06759).

## Leaders' Workshop

The Long Island Sound Taskforce, as the regional chapter of the Oceanic Society, will sponsor an "Environmental Leaders' workshop" on Saturday, December 2, at the Stamford Marine Center.

The Purpose of the workshop will be to improve communications among environmentalists around the Sound, in order to deal more effectively with problems found there. For more information, please contact Suzi Wilkins at (203) 327-9786.



---

---

# LAND TRUST ISSUES

by Jack Gunther,  
Land Trust Service Bureau

---

---

## Tests of Public Support

Following the publication in the September Citizens' Bulletin of my article calling attention to the mechanics of the "Ten Percent Support Test," I believe it will be helpful to comment on the other significant elements of the "Facts and Circumstances Test" designed to determine whether a Land Trust is so organized and operated "as to attract new and additional public or governmental support on a continuous basis." If the land trust fails to meet the "public support" test, the deductibility of contributions to the trust is limited to twenty percent of the adjusted gross income of the donor, without the five year carryover.

I am using the experience of the New Canaan Land Conservation Trust in the following sample questions and answers to illustrate the application of the test. Please keep in mind that the New Canaan Land Conservation Trust, Inc., operates in a rural-residential community with a population of around 20,000 and an area of 14,200 acres. It has received thirty-eight outright gifts of land and five Conservation Easements in Perpetuity. It was organized late in 1967, and has acquired well over 150 acres.

1. Describe the nature of your appeals for support from the general public.

We recently mailed our eleventh annual brochure to the 5,500 households in New Canaan on the list of the local mailing service. Our annual brochures contain a report on the activities of the Land Trust during the year and, as a total community effort, we appeal for wide public support. In particular, we seek broad public participation in the affairs of the Land Trust by inviting and, in fact, urging members of the public to become annual voting members.

We have articles in the local newspaper, from time to time, particularly with regard to new gifts of land or conservation easements which add to New Canaan's inventory of badly needed, permanent open spaces. We sometimes incorporate in the articles an appeal for public support (dues,

other contributions, and gifts of land or easements).

2. Is your dues schedule designed to attract and make membership available to a broad cross section of the interested public?

Despite inflation, we have never raised our initial annual dues of \$10 for an individual voting membership. We have over 500 annual voting members and in our efforts to increase the membership we recognize the need to maintain an attractive dues schedule.

3. Do you have a representative governing body (representing a broad cross section of the views and interests of the community)?

Our Board of Directors represents a wide cross section of the views and interests in New Canaan. The present nine Board members include the Chairman of the Conservation Commission, ex officio, and a member of the Planning and Zoning Commission, Inland Wetlands and Water Courses Commission, and the Board of Tax Review. The range of other interests represented by our directors include the YMCA, the New Canaan Library, the Garden Club, Audubon Society, the New Canaan Nature Center, United Way, real estate, rehabilitation and education.

4. Do you publish your financial statements in the local newspaper?

We publish our financial statements in the local newspaper at the time of our annual meeting of members. The figures are usually incorporated in the account of the meeting.

5. Do you attempt to keep the general public informed about your activities?

We publicize our Annual meetings and the public is invited to attend and ask questions. The public is kept advised of activities in the annual brochure and periodic newspaper articles.

6. Do you have any public programs?

At our request, the Audubon Society and the Nature Center have inspected some of our larger wildlife sanctuaries to determine how they can be included in joint educational programs.

The Land Trust has been given a permanent office in Waveny House, the town-owned community center.

I hope these examples will help you determine how well your Land Trust qualifies under the overall "Facts and Circumstances Test." I would be glad to get any comments or questions.

# Water Resources Head Appointed

Benjamin Warner, Acting Director of the Water Resources Unit since May 1977, was officially appointed Director of DEP's Water Resources Unit on September 20.

"I see water resources stewardship as the unit's long-term goal--not just preserving or just consuming but taking care of our water resources," Warner says. The unit administers statutes regulating use of tidal and inland waters and related resources and coordinates federal, State, and local water resource management programs.



Starting with "an already well-staffed regulatory section," Warner hopes to increase the Unit's programming and technical assistance capacities. "We get more requests for help with beach and shore erosion problems, for example, than we can respond to."

The goal of the Unit's inland wetlands activities, he said, "is to manage them and educate the public and the municipalities in careful utilization of inland wetland areas so these lands are not destroyed and their values--as habitat for flora and fauna, as flood storage areas, as recharge areas for underground aquifers--are not lost forever."

In the case of tidal wetlands, Warner emphasizes that the Water Resources Unit is responsible for preservation: "Ideally, we'd like to preserve every acre of tidal wetlands possible. Our tidal wetlands have been depleted dramatically over the last fifty years, and we have lost a lot of marine nursery areas and natural filtering areas and have interfered with the marine food chain."

The Water Resources Unit is also responsible for flood control efforts. The philosophy today, Warner said, is "controlling floods with minimal harm to the environment. But where populations live in flood prone areas, we have to also address ourselves to solving their problems."

"There hasn't," Warner said, "been a really major flood in Connecticut since 1955. So, by the law of averages, the possibility of another one increases every year."

"Today many areas are protected as well as possible," he said. "A number of flood control projects have been completed. And we're expediting control programs in areas that still need them."

Warner has spent thirteen years in State service. He joined the Department of Agriculture and Natural Resources in 1965 as an assistant forest ranger. In 1967 he became a Conservation Agent for that Department, working with flood control projects and dealing with soil conservation districts and local conservation commissions. Under the new Department of Environmental Protection he continued in a similar position until 1973 when he became Upland Watershed Technician in the Water Resources Unit.

---

## WILDLIFE FEDERATION OFFERS FELLOWSHIPS

The National Wildlife Federation has set a deadline of December 31, 1978, for applications from graduate students for its 1979-80 Environmental Conservation Fellowships. Applicants must be citizens of the United States, Canada or Mexico who are pursuing degrees in a college or university graduate program or law school. They must be principally engaged in research in fields

related to wildlife, natural resources management, or the protection of environmental quality. The grants range up to \$4,000.

The Federation also awards joint fellowships with the American Petroleum Institute for studies involving petroleum and the conservation of resources. For information, including a list of priority topics, and application forms write the Executive Vice President, National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036.

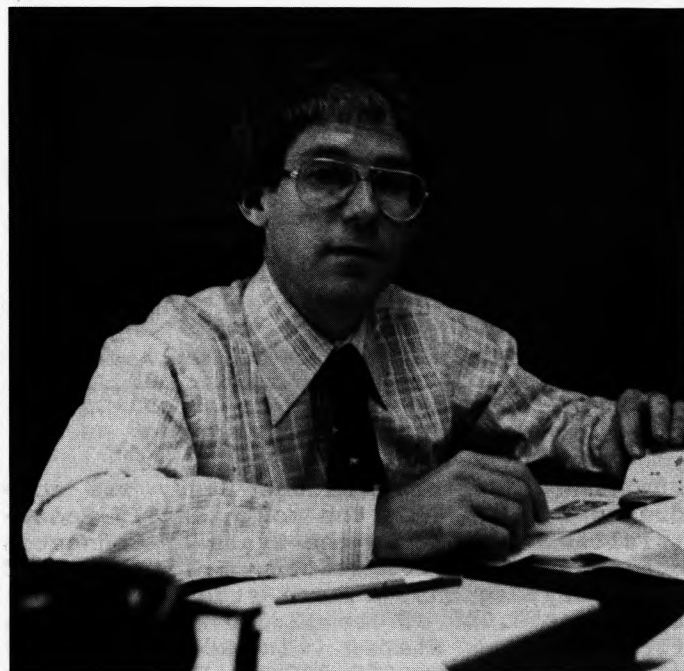


## Air Compliance Director Named

Leonard Bruckman was appointed Director of DEP's Air Compliance Unit on September 19. On the heels of Bruckman's appointment Stanley J. Pac, Commissioner of the Department of Environmental Protection announced, "We're pulling out all the stops, and I'm confident that we will complete Connecticut's Air Quality State Implementation Plan revision by our January 1, 1979, deadline."

"I'm giving this project first call on personnel," the Commissioner said, "as well as resources such as computer time. We'll be working around the clock if necessary."

Bruckman, who has been with the DEP since 1972 as Principal Air Pollution Control Engineer in the Monitoring and Engineering sections of the Air Compliance Unit, said his first move as air unit director would be reallocating staff resources. "While we've been without a director, there's been a gap in our day-to-day decision making and especially in the allocation of personnel. Staff people have been trying to keep up with necessary day-to-day operations as well as working on developing the revised plan. I intend to cut loose some of the staff and have them work full time on developing this plan."



Bruckman received his bachelor's degree in civil engineering from City College of New York, a Master of Science degree in applied mechanics from RPI - Hartford Graduate Center, and a Master of Science in environmental engineering from the University of Connecticut where he is working toward a doctorate in environmental engineering. Bruckman has jointly and individually been involved in the preparation of eighteen technical papers on air pollution related subjects and has lectured at a number of colleges and conferences.

### CPR Shown to Hunter Safety Instructors

*Patricia Discola, of the Rocky Hill Veterans' Home and Hospital, and Joseph Hickerson of the Department of Health's Office of Emergency Medical Services, demonstrated cardio-pulmonary resuscitation (CPR) to some of those attending the annual Hunter Safety Instructor Workshop September 16. The State's roughly 375 registered hunter safety instructors offer over 300 courses each year for first time hunters over twelve years old and persons who haven't been licensed in over ten years.*







# 208

## WATER QUALITY

### MANAGEMENT

209 COURT ST., MIDDLETOWN, CT. 06457 347-3700

By Joseph M. Rinaldi, 208 Public Participation Assistant

## Industrial Sludge Study

An Industrial Sludge Study was conducted for three of the most heavily industrialized regions in the State of Connecticut, the Greater Hartford, Bridgeport and Waterbury regions. These study areas contain some 3,200 of the 12,000 manufacturing firms in the State. In addition, they account for over 150,000 of Connecticut's 400,000 manufacturing employees. The largest industrial categories are those associated with metals, machinery, transportation, and chemical manufacturing, and the sludges generated are chiefly metal hydroxides, hydrocarbons, chemicals, and paints. The survey accounted for over 12.5 million gallons of these sludges being generated each year in the study area.

There are 75 waste haulers in the study area involved in the transportation of these materials, only thirty of which are licensed by DEP. In addition, the disposal areas identified to date indicate that forty-six industries have on-site disposal and another fifty-one send their wastes to municipal or private landfills. At least nine of these sites are of concern because of their proximity to known or potentially favorable aquifers, as mapped by the Natural Resources Center of DEP in cooperation with the U.S. Geological Survey.

The following is a summary of the predominant wastes and associated major disposal practices within the three regions.

Oils - 2,350,000 gallons per year; 90% is reclaimed. Only 1% is disposed of at landfills or on-site.

Metal Hydroxides - 6,500,000 gallons per year; 30% is disposed of at landfills, 35% is disposed of on-site, and 16% is taken by Connecticut waste haulers.

Solvents - 210,000 gallons per year; 55% is taken by Connecticut waste haulers, 25% goes directly to reclaim facilities, and 10% goes back to the suppliers. About 3% is disposed of at landfills.

Paints - 90,000 gallons per year; 55% goes to landfills, 15% is taken by Connecticut waste haulers, and 15% by out-of-state haulers.

Grinding - 650 cubic yards per year; 45% goes to landfills and 50% is taken by Connecticut waste haulers.

Chemicals - 3,500,000 gallons per year; 35% is taken by Connecticut waste haulers, 35% is stored on-site, and 15% goes to landfills.

Water-Filtration - 6,000 tons per year; 80% is disposed of on-site and 16% goes to landfills.

Tumbling - 190,000 gallons per year; 40% is taken by unnamed waste haulers and 30% goes to landfills.

Incinerator Ash & Particulate - 3,750 tons per year; 95% goes to landfills.

Scrubber - 130 tons per year; 98% goes to landfills.

Food Processing - 5,700 tons per year; 47% is taken by Connecticut waste haulers, 37% goes to the sewers, and 6% is reclaimed (i.e. goes to a rendering plant).

### CONCLUSIONS

There are several fundamental findings of this report. In general, they deal with the existing legislation and its implementation along with the results of the inventory. Specifically, the conclusions are:

1. State and federal legislation exists to control industrial sludge disposal; however, federal legislation is not yet effective pending promulgation of regulations, and some modifications of State legislation are needed to broaden the authority of the State to establish control over all haulers of industrial sludges and to implement or parallel federal law.
2. Inadequate staffing in several of DEP's sections results in inadequate enforcement of laws which are available to control industrial sludge disposal. For instance:
  - A. There are, in essence, only three (3) people to require permits, review and spot check all haulers of waste oil, petroleum products, or chemical liquids in the State.
  - B. There is only one (1) person assigned to developing a compre-

hensive sampling program for all landfills in the State.

- C. There are only four (4) people in the Solid Waste Management Unit to inspect 205 landfills statewide, and there are only three (3) people to handle industrial and hazardous wastes disposition at landfills.
3. Coordination between different sections of DEP and other State agencies could be improved. In particular, there is, at present, a poorly coordinated system by which either the Air or Water Compliance Unit informs Solid Waste of a particular sludge problem during permit review.
4. There are some seventy-five (75) waste haulers identified in this report which are involved with the transportation of sludges, only thirty (30) of which are licensed to haul waste oil, petroleum products or chemical liquids. This results in a substantial amount of industrial sludge being disposed of by unlicensed haulers and, more importantly, at unknown disposal sites. This certainly increases the potential for mismanagement, and the authority of the State to license haulers of industrial sludge as defined in this report should be clarified.
5. At the present time, only waste oils and solvents are usually reclaimed in processes external to the industry served. Many of the other sludges are disposed of by burial on-site or at a municipal landfill. The location of some of these disposal sites over potentially favorable aquifers raises a problem, especially with the paucity of hard data on the quality and quantity of water available from these potential aquifers. The cost of treating water from these aquifers in the future, should they become contaminated, could be in the millions of dollars if they are to be used for drinking water. It should further be recognized that it may not be possible to treat water from some of these contaminated aquifers to meet State standards based on the Federal Safe Drinking Water Act.
6. Considering all available recycling, reduction and substitution schemes, and the construction of Solid Waste Resource Recovery facilities around the State, there is and will continue to be a major need for a central disposal facility or facilities to accept and properly handle problem industrial

sludges. Without such facilities, industrial sludges will continue to be received and disposed of at less than desirable sites.

#### RECOMMENDATIONS

1. Appropriate amendments to existing State legislation should be developed and proposed to provide more comprehensive control over haulers of industrial sludges, and to allow the State to effectively administer the hazardous waste management program required under federal law (RCRA) on both an interim and a permanent basis.
2. The staffing of the enforcement divisions of DEP's Solid Waste & Water Compliance Units should be increased. This should include at least the addition of three (3) people to the Oil/Chemical sub-unit of Water Compliance, one (1) person to the monitoring development program, and one (1) person to both the Solid Waste Unit and Water Compliance Unit to be involved strictly in industrial sludge disposal. Money which the State will receive under RCRA could fund most of these positions. It will be up to the Commissioner of DEP to see that this money is spent for these purposes.
3. A system should be developed within DEP to insure that any applicant for a new air or water treatment facility submits data on expected sludge type, generation rate and disposal mechanism. This information should be relayed automatically to the Oil/Chemical sub-unit of Water Compliance and the Solid Waste Unit. Disposal site planning should include a determination of the effect on favorable aquifers or other public and private water supplies, the leachability of the wastes, the soils involved, the need for monitoring, and the management plan associated with the use of a site. In addition, the local water company should be notified of the intended disposal facility prior to the public hearing on the permit. They are not specifically notified at this time, although the affected RPA and local authority is.
4. An effective industrial sludge tracking/monitoring system, as mandated for hazardous wastes under RCRA, should be developed in a joint effort by DEP, 208, and affected industry. All industrial sludge haulers identified in this report should be contacted by qualified 208 staff in order to develop reliable information regarding their disposal practices and to ascertain

(See page 19.)



# For Your Information



By Ellen Frye,  
Citizen Participation Coordinator

## Air Pollution Conference

Many of Connecticut's citizens are probably unaware of the range of issues associated with air pollution.

Dirty air affects health, jobs, communities, mobility, pocketbooks . . . life styles. Whether society chooses to ignore air pollution or to clean it up, changes in day-to-day life are going to result.

To educate Connecticut residents about current air pollution problems and to bring the citizenry directly into the air pollution cleanup decision making process, DEP and the Connecticut Lung Association will sponsor Project Impact on Wednesday, November 15, from 1 p.m. to 9 p.m. at the Sheraton Park Plaza in New Haven.

Project Impact will encourage public involvement in State air quality programs by groups not traditionally involved in environmental issues. The conference steering committee is composed of individuals representing a broad base of citizen concerns such as business and industry, urban, minority, health, and labor organizations as well as environmental groups.

State and regional agencies such as the Department of Transportation, the Office of Policy and Management, the DEP, and metropolitan planning organizations will be encouraged to send representatives.

Henry Beal, Director of Standards and Regulation Evaluation for the U. S. EPA, will give a presentation on the air pollution problem in Connecticut to acquaint citizens with the nature of the problem, its causes and effects. Beal was formerly Director of Air Compliance for the Connecticut DEP.

DEP Deputy Commissioner for Environmental Quality, Melvin Schneidmeyer will discuss the strategy alternatives DEP is considering in its

current revision of the official State Implementation Plan for Air Quality, which will outline Connecticut's long and short term approach to air quality cleanup.

Reactions to the DEP proposals will be expressed by a seven-member panel representing various groups.

# DIRTY AIR

**IMPACTS YOUR LIFE!  
DO SOMETHING ABOUT IT**

**AT...**

## PROJECT IMPACT



**November 15, 1978**

**Presented by:  
The Connecticut Lung Association &  
The Connecticut  
Department of Environmental Protection**

Afternoon and evening work sessions will offer six simultaneous discussion groups, each of which will focus on specific areas on which participants will develop citizen statements. Topics include: stationary source emission strategies, hazardous pollutants, prevention of significant deterioration and the pollution offset policy, mobil source emission strategies, and short and long term strategies to reduce vehicular miles traveled.



The six workshops will be repeated, once in the afternoon and once again in the evening. Participants will be encouraged to participate in more than one workshop.

Advance information is available from:

Phil Woodrow 289-5401  
Connecticut Lung Association  
45 Ash Street  
East Hartford, CT 06108

## Noise Seminar

Noise is a form of environmental pollution which often receives less attention than dirty air or polluted water. But it can be not only an annoyance but also a health hazard.

Last June DEP adopted regulations for State and local noise regulation efforts. The DEP regulations spell out State-regulated noise sources and enable municipalities to develop their own noise ordinances or regulations.

To familiarize local officials with the State noise program and to encourage local noise control programs, DEP, in cooperation with the University of Hartford and the U. S. Environmental Protection Agency, will offer a "Connecticut Noise Control Seminar" on Thursday, November 9, from 9 a.m. to 4 p.m. at the University of Hartford's new Lincoln Theatre.

DEP Commissioner Stanley J. Pac and University of Hartford President Stephen Joel Tractenberg will open the program. "Community Noise and Public Health" will be discussed by Conrad J. Hemond, Jr., Professor of Mechanical Engineering and Director of Research and Development at the University of Hartford. DEP Deputy Commissioner for Environmental Quality Melvin J. Schneidmeyer will explain "Connecticut's Program on Noise Control."

One important source of assistance in developing communities' noise control programs is EPA's ECHO (Each Community Helping Others) program. This will be described by Donna L. Williamson, an Environmental Protection Specialist with EPA.

A box lunch will be available at minimal cost, followed by a panel discussion on the "Development and Enforcement of Community Noise Control Ordinances." Panelists will include Alan J. Hicks, Engineer for the EPA Region I Noise Program; G. A. Russell, an EPA acoustical consultant; Paul Willis, Executive Director of the Brookline, Massachusetts, Conservation Commission; Neal F. Clark, Assistant Division Chief for the Connecticut Department of Motor Vehicles; and Kathy Summerlee, Attorney Advisor, EPA.

Participants will then break up for workshops focusing on various areas of interest:

health; planning and zoning; building and construction; enforcement; and administrative aspects.

## Water Resources Seminars

The Institute of Water Resources of the University of Connecticut is offering monthly seminars in a 1978-79 series entitled "Water Resources Planning and Management: New Directions."

All seminars will be in Room 200 of the Nathan L. Whetten Graduate Center at the University. Seminars begin at 3:30 p.m. Coffee and doughnuts will be served at 3 p.m.

NOVEMBER 15, 1978

"The National Water Use Program"  
Frederick H. Ruggles, Jr., Hydrologic Engineer,  
U. S. Geologic Survey, Water Resources Division

DECEMBER 20, 1978

"Environmental Litigation"  
James T. B. Tripp, Counsel, Environmental  
Defense Fund

JANUARY 17, 1979

"Section 208 Program: Progress to Date"  
Melvin J. Schneidmeyer, Deputy Commissioner  
of Division of Environmental Quality, Connecticut  
Department of Environmental Protection

FEBRUARY 21, 1979

"Oil Spills: The Coast Guard Problem"  
Robert Hildebrand, Geochemist, U. S. Coast  
Guard Research & Development Center

MARCH 21, 1979

"The Coastal Area Management Program"  
Robert Knecht, Assistant Administrator,  
National Oceanic and Atmospheric Administration,  
Office of Coastal Zone Management; and  
Arthur J. Rocque, Jr., Program Manager,  
Coastal Area Management, Connecticut DEP

APRIL 18, 1979\*

"Impact of the Law Regulating Drinking Water  
on Resource Management"  
Madelyn M. Huffmire, School of Business Administration,  
University of Connecticut

"Hazardous Organics in Drinking Water"  
Dr. Ralph P. Collins, Botany Section,  
Biological Sciences Group, University of  
Connecticut

"Subsurface Waste Disposal with Biological  
Denitrification"  
Dr. Rein Laak, Department of Civil Engineering,  
University of Connecticut

\*Seminar will begin at 3:10 p.m.

# Towns Together Protect Meadows

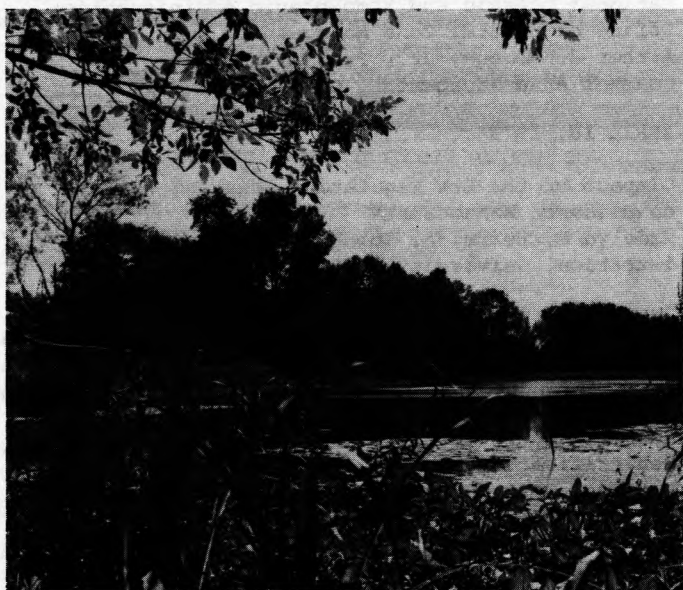
Along the Connecticut River a few minutes from the urban hustle and bustle of Hartford is a ten square mile floodplain of productive green open space. This area, known as The Great Meadows, falls within the towns of Glastonbury, Rocky Hill, Wethersfield, and East Hartford. These towns have always controlled the meadows as four separate parcels within the four different political jurisdictions.

This past June, public officials and citizens from the four towns got together for a discussion session, sponsored by The Great Meadows Trust, to determine their mutual concerns for the future of the meadows. The meeting led to the informal recognition by the towns that these meadows are a key open space area which they can most effectively protect by working together to develop governing policy for the meadows as a whole.

This bit of news should be of interest to citizens in these and other Connecticut communities, not just because an important open space area may be better protected but also because the protection of these meadows will be a good example of inter-municipal cooperation.

Except for convenient rivers and streams, political boundaries tend to be basically arbitrary lines drawn with no real thought for natural features and functions. A drainage basin, for example, which has a natural functional boundary dictating the direction water will go, may have two, three, or more separate political units superimposed on its natural boundaries.

*The diversity of vegetation in the Great Meadows contributes to its importance as wildlife habitat.*



Often one political unit makes land use decisions independent of adjacent political units, decisions which may impact on the other units in ways such as increased downstream flooding due to accelerated runoff from a large new subdivision in the upstream town. It is important that communities recognize the possible impact that their decisions might have on their neighbors and vice versa. Land use planning is best done with mutual concerns in mind. Inter-municipal cooperation is ideal, and it is certainly the goal of regional planning agencies in the state. In reality, however, our communities do not routinely work together. Hence this story of the meadows --- it's a good sign.

Some citizens of the Great Meadows communities have long voiced concerns for the welfare of this unique floodplain. The Great Meadows Trust is a non-profit organization that was founded to inspire public awareness of the meadows, purchase land, and fight development proposals that threaten the meadows. In 1969, the Trust produced a study of the meadows, "The Great Meadows of the Connecticut River -- An Inventory and Analysis of Resources and Recommendations for Conservation and Developments."

John Pagini, Glastonbury's Environmental Planning Assistant, explained some of the important values of the meadows. As flood storage areas the meadows are recognized as a better flood control measure than diking. They also have open space, scenic, and agricultural values. The meadows, with a variety of wetland types, have mini ecosystems with prime breeding spots for crustaceans, amphibians, and other wildlife. They are also a stopover place for migrating birds. Pagini was optimistic that the towns were beginning to recognize the meadows as "one hydrologic and environmental unit ... which should be treated as a whole."

On September 11 the towns met again and agreed to form a policy advisory committee that will work in cooperation with the Capitol Region Council of Governments. An organizational meeting of citizen representatives from local commissions was arranged for October 4. Pagini feels the ultimate goal could be a "binding compact among the towns." Such a compact could include an agreed upon approach to controlling the kinds of land uses in the meadows.

Mayor Paul Daukis of Rocky Hill is enthusiastic about the towns working together. "What one town does with the meadows will have an effect on the others," he said. "Wethersfield's meadows are al-



ready under development pressure." Daukis is concerned that if one town begins to develop its meadows it will affect the meadows as a whole environmentally and economically. Daukis feels the meadows offer an ideal open space which he hopes can be left in a "natural state for people to appreciate." He said he would not be adverse to purchasing meadow land for this purpose.

The federal and State governments are already looking at the meadows for future floodplain management and land use control purposes. Pagini feels the towns' activities will not conflict with this, but present a local view of meadows management.

Land use controls for any situation where such open spaces should be protected

could include a combination of approaches such as direct acquisition, zoning, agricultural preservation, transferable development rights or easements. Continued agricultural use is being encouraged for the Great Meadows. The meadows could be used by citizens for environmental education, hiking, hunting and other non-intensive recreation.

This summer the U.S. State Department brought a contingent of Moroccan dignitaries to join Glastonbury citizens for a bus tour of the Great Meadows. They viewed the Glastonbury-Rocky Hill Ferry, a recently closed landfill site, agricultural fields, a turf farm, foliage, and a sewage treatment plant.



Photo by Duffy

*The Great Meadows of Wethersfield (in foreground) and Glastonbury, looking southeast from Interstate 91. Note large expanses in agricultural use.*

## Sludge (from page 15.)

- locations of dumping sites. If the hauler should be licensed under existing law and is not, the Oil/Chemical sub-unit of the Water Compliance Unit should be notified.
5. The 208 Staff should carry out planned sampling activities at selected landfills and disposal sites to obtain site specific data on the effects of disposal of metal hydroxides and chemical sludges on groundwater and nearby surface water. 208 will also assemble all relevant existing hydrogeologic data for the three planning areas being studied with the intent of identifying the relative effects of the present disposal areas.
6. The 208 Staff will investigate all recycling, reduction, substitution and exchange systems available to the industries involved in this study and publicize the results.
7. The 208 Staff will examine means of developing a system to insure that all oils and solvents are disposed of by means other than disposal to the land.
8. In cooperation with other public agencies and/or interested private firms or organizations, efforts should be made to assist in appropriately locating one or more central industrial sludge disposal facilities. Other public or quasi-public agencies to be involved in such planning in addition to the 208 Board include CRRA, DEP, the Department of Commerce, and the Department of Health. Private firms or organizations include the Connecticut Business and Industry Association and firms which are interested in providing such central services. The need for legislative action to make it attractive to private enterprise to fill this need should be seriously considered.



# Trailside Botanizing

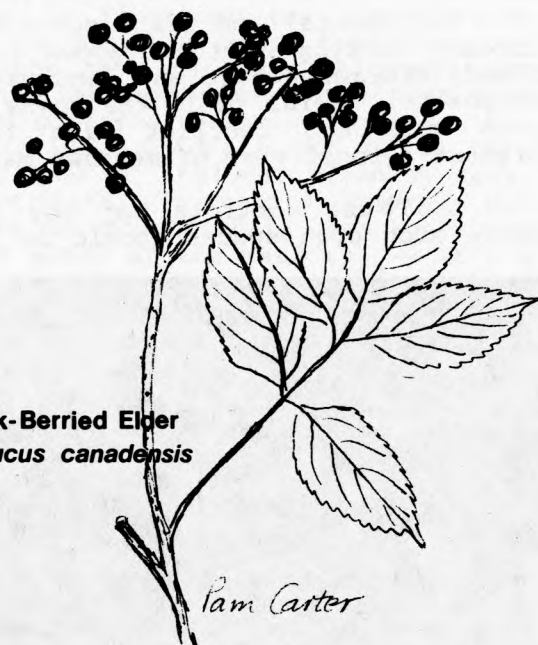
by G. Winston Carter

New pleasures await those who can identify plants at any season of the year regardless of how they differ in appearance. Our common elderberry, which may grow up to 12 feet high in wet areas and along streams, is a good example. It is a shrub that can probably be quickly recognized at any time of the year. Its delicate open, flat-topped flowers blossom from June through July. If picked and cooked in batter they are delicious. Later in the season, from August to October, the berries may be used for making pies or elderberry wine.

As the temperature drops and its compound leaves fall, this elderberry may still be recognized by rough warty bumps, called lenticels, which are scattered over its woody stem and serve as breathing pores for the plant during the winter months, a function carried on by the leaves before they are shed.

The red-berried elder can be easily distinguished from the black-berried elder by the difference in the color of the pith. It is reddish in the red-berried species and white in the common elderberry.

The black-berried elder serves as food and cover for game animals such as grouse, pheasant and white-tailed deer. Uncooked, certain parts of the plant contain chemicals which can be somewhat poisonous. Small children sometimes have been involved in accidents which have been caused by eating the roots or from using the pithy stems as blow-guns. The fresh berries are the least toxic.



**Black-Berried Elder**  
*Sambucus canadensis*

The genus name *Sambucus* comes from the Latin word "sambuca," the name given to a Roman harp made of elderwood, which is unrelated to our elderberry.

---

## DEP citizens' bulletin

---

State of Connecticut  
Department of Environmental Protection  
State Office Building  
Hartford, Connecticut 06115

Commissioner: Stanley J. Pac  
Director Info & Ed: Greg Sharp  
Editor: Margot Callahan  
Layout: Rosemary Gutbrod  
Typist: Linda Mrowka  
Phone: 566-5524

"The Connecticut Department of Environmental Protection is an equal opportunity agency that provides services, facilities and employment opportunities without regard to race, color, religion, age, sex, physical handicap, national origin, ancestry, marital status or political beliefs."

---

SECOND CLASS POSTAGE PAID  
AT HARTFORD, CONNECTICUT